



IEEE CINCINNATI SECTION NEWSLETTER - OCTOBER 2008

OCTOBER MEETING

Stuff You Don't Learn in Engineering School

DATE: Thursday, October 16, 2008
PLACE : Raffel's – 10160 Reading Road (see below for directions)
TIME : 5:30 p.m. to 6:00 p.m. - Social Time
6:00 p.m. to 7:00 p.m. - Dinner
7:00 p.m. to 8:30 p.m. - Presentation

COST FOR DINNER: \$10.00 per person – REGARDLESS OF MEMBERSHIP OR MEMBERSHIP GRADE!

NOTE: DINNERS ARE ALWAYS OPTIONAL - YOU MAY ATTEND THE PROGRAM ONLY.

LOCATION: Raffel's is located at 10160 Reading Road, south of Glendale-Milford Road on the east side of Reading. Take I-75 to the Glendale-Milford Rd. Exit, go east on Glendale-Milford Road approximately $\frac{3}{4}$ of a mile to Reading Rd. and turn right on Reading.

RESERVATIONS: Please email Fred Nadeau for reservations at <mailto:fnadeau1@earthlink.net> (preferred) or call the Section Voice Mail at 513-629-9380 by **Noon, Tuesday, October 14, 2008** if you plan to attend. Please leave your Name, IEEE Member Number, and a daytime telephone number.

PE CREDITS: Depending on the subject matter, attendance at IEEE Cincinnati Section Meetings now qualifies the attendee for Professional Development Hours towards renewal of Professional Engineers Licenses. Required documentation will be available following the meeting! The Section Meetings also provide a great opportunity to network with fellow engineers in the area.

ABOUT THE MEETING: This month's meeting will feature a presentation by Carl Selinger of his *toolbox for life* - a collection of non-technical “real world” leadership skills including decision-making, setting priorities, negotiating, teamwork, running meetings, and better writing and speaking. This presentation will be a one-hour version of his workshop. Mr. Selinger, in addition to presenting seminars on soft non-technical skills, is a contributing editor to Spectrum Magazine, an independent consultant in aviation, transportation planning and strategic business planning, and the author of the book “Stuff You Don't Learn in Engineering School”, which is included with some workshop registrations. The Section is encouraging everyone that attends to invite a young engineer to the meeting to help them with their career.

On October 17th, Carl will be giving a two-hour version of his "Stuff" talk in the College of Applied Science auditorium (Room 100) from noon to 2:00. This program was arranged for the Student Branch of IEEE at the

University of Cincinnati. However, all are welcome to attend. Please note that a decal is required to park in the UC parking lot during this event.

On October 18th, Mr. Selinger is presenting his full, six hour seminar at The College of Applied Science Auditorium, Classroom 100, which will provide six CPD credits for Ohio P.E.'s. For details, go to the Section Web Page, <http://www.ieeecincinnati.org/professional-development-workshop/>

MEMBERSHIP NEWS

NEW MEMBERS

The following individuals are IEEE members who are new to our Section:

Dan Autrey	James M. Frilling	Peter Simko
Syed Bilal	Matthew Giovanetti	Aaron L. Van Camp
Matt Cole	Charmin Green	Dustin Michael Voet
Jason Draime	Jason Miley	Patrick Weir
Kenneth S. Edge	Matthew Ngo	Lee Anthony Wiwi
Matthew Edlefsen	Talmay B. Oliveira	Dennis William Wojtow
David Esposito	Sriram Ravindren	Paul Michael Wolfe
Alex Anthony Ficke	Jessica Erin Seip	Thomas Zistler

We wish to welcome these new members to the Cincinnati Section!!!

Scanning the Past: A History of Electrical Engineering from the Past

Submitted by Bob Morrison, Editor

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Donald B. Sinclair

Fifty-five years ago this month, the PROCEEDINGS OF THE INSTITUTE OF RADIO ENGINEERS (IRE) included a paper by Donald B. Sinclair on the use of the twin-T circuit in impedance measuring instruments. At the time he was a design engineer with the General Radio Company in Cambridge, MA, where he worked for nearly four decades.

Sinclair was born in 1910 in Winnipeg, Canada, and operated an amateur radio station in the attic of his home as a teenager. He spent three years as an undergraduate at the University of Manitoba before transferring to the Massachusetts Institute of Technology (MIT). In 1931, he graduated in electrical engineering at MIT, where he subsequently earned an M.S. degree in 1932 and a doctorate in 1935. After a year as a research associate at MIT he joined the General Radio Company in 1936. He coauthored an IRE paper published in 1936 on a method of determining the residual inductance of a variable capacitor at radio frequencies. In another IRE paper published in 1938, he discussed the parallel resonance method for precise measurements of impedance.

In his July 1940 paper, Sinclair explained how the parallel twin-T network had been employed in a commercial impedance bridge which was capable of precision measurement at much higher frequencies than with earlier instruments. The new impedance bridge covered the range from 500 kHz to 30 MHz, which included a portion of the shortwave spectrum as well as the standard radio broadcast band. An important advantage of the twin-T null instrument was that it enabled use of a variable air capacitor. Sinclair also explained how to correct for small errors due to residual parameters. In still another IRE paper published in November 1940, he described a radio-frequency bridge instrument which could be used for measurements to 60 MHz.

During the same period, Sinclair developed a precision radio receiver for use in field strength measurements over a range of frequencies from 100 MHz to 3000 MHz. A version of this receiver was adopted for use in radar countermeasures by the military during World War II. During the war, Sinclair divided his time between General Radio and the Radio Research Laboratory at Harvard University, a center for countermeasures research and development. He flew as an observer on early ferret plane flights in Europe and received a Presidential Certificate of Merit in recognition of his wartime contributions.

Sinclair served as Chief Engineer at General Radio from 1950 to 1960 and as President of the company from 1963 to 1973; he retired in 1974. He was elected a Fellow of the IRE in 1943, served as IRE President in 1952, and was elected to the National Academy of Engineering in 1965. He served as a Visiting Professor at MIT for a time and also served several years on the local school board. He died in 1985 at age 75.

*James E. Brittain
School of History , Technology and Society
Georgia Institute of Technology*

IEEE NEWS

IEEE RFID 2009 Conference Seeks Technical Papers

WASHINGTON (17 September 2008) -- Organizers of the 2009 International IEEE Conference on RFID (IEEE RFID 2009) are seeking technical papers from authors presenting the latest research, innovations and implementations related to the theory and practice of RF-based identification and communication systems. Accepted papers will be published by the IEEE and presented at IEEE RFID 2009 (www.ieee-rfid.org/2009/), which is co-located with RFID Journal Live! executive conference and exhibition (<http://www.rfidjournalevents.com/live/>) in Orlando, Fla., USA, 27-29 April, 2009. The third-annual conference will address the technical and policy challenges of RFID technologies and feature keynote speakers from RFID thought leaders, panel discussions and presentations on technology advances.

Topics of interest include antennas & propagation; circuits, devices and sensors; communication protocols; security & privacy; system tools; RF-based localization; RFID system architecture; policy & regulatory issues; deployment issues and concerns; and applications.

RFID, or “Radio Frequency Identification,” is an enabling technology. Tags storing information on a microchip connected to a radio antenna are accessed by readers that use radio waves to poll the tag and retrieve the data.

Authors are invited to submit full 8-page papers in the IEEE conference format (http://www.ieee.org/portal/cms_docs/pubs/confpubcenter/pdfs/samplems.pdf). Submissions must describe original work not previously published or currently under review for publication in another conference or journal.

Abstract submissions are due 1 December 2008 and paper submissions 5 December. Acceptance notification is 13 February, 2009 and publication-ready papers are due 13 March, 2009.

IEEE-USA and the IEEE Communications Society (<http://www.comsoc.org/>) are financial co-sponsors for IEEE RFID 2009.

Questions can be directed to 2009info@ieee-rfid.org.

IEEE-USA MASS MEDIA ENGINEERING FELLOWS DESCRIBE THEIR SCI-TECH REPORTING AT TWO CALIF. NEWSPAPERS

WASHINGTON (24 September 2008) -- "Science and technology writers are gatekeepers of a sort," writes IEEE-USA Mass Media Engineering Fellow Wendy Hansen. "Let too much arcane detail muddle the big picture and you risk driving readers away. Deprive readers of important news or details, and they won't have basic information about our science-and-technology-heavy culture. Worse, they may think that sci-tech is unimportant because they never hear about it."

Hansen completed a 10-week internship from June to August at the Los Angeles Times and received her Ph.D. in biophysics this year from the University of California-Berkeley. While at the LA Times, the IEEE-USA Mass Media Engineering Fellow published multiple articles, including: "Serotonin may be key in infant deaths"; "Rock analysis turns up evidence of moon water"; "Deadly cancer soars in women"; and "No gender differences found in math scores."

A second IEEE-USA Mass Media Engineering Fellow, Maddalena Jackson, who interned at the Sacramento Bee and was a 2008 engineering graduate of Harvey Mudd College in Claremont, Calif., added to Hansen's comments on reaching the public about complex sci-tech issues: "From the reactions I've gotten, the public would be happy to see more thorough science and technology in their stories. I feel that everyone is becoming more mistrustful, and the media can respond with thoroughness and more evidence. Not more numbers, and not in a way that will confuse people, but in answering the next 'why?' or 'how do you know?' that will come from a story."

Jackson predicted that sci-tech reporting will be instrumental in facilitating the public and policy debate on energy: "It is very difficult to understand the problem and solutions to meeting our energy demand without clear sci-tech reporting, which means adding context: who is using energy, what energy are they using, where are they using it, why, when, and how is it made. These questions must be answered, or it won't matter what political figures are saying about energy, because we won't know what we're arguing about."

During her internship, Jackson collaborated with Scott Lebar, assistant managing editor of news at The Bee, who said "she is the epitome of what the [Mass Media Fellows] program set out to achieve...We teach, she learns, she writes, our readers learn."

Since 2000, 11 U.S. IEEE undergraduate and graduate students have been chosen as IEEE-USA Engineering Mass Media Fellows; and they have helped journalists in print and broadcast fields communicate authoritatively to the public about science, engineering and technology. IEEE-USA is the only engineering organization engaged in the Mass Media Fellows program, which is administered by the American Association for the Advancement of Science (AAAS). IEEE-USA is also one of a smaller group of sponsoring societies that supports more than one Fellow. IEEE-USA Communications Committee Members Allan Schell and Abby Vogel helped to select the IEEE-USA's Fellows.

In 2008, 14 AAAS Science & Engineering Mass Media Fellows produced some 275 first-run sci-tech news stories -- many of which were further distributed by the Associated Press and foreign language services. To obtain an application for the 2009 program, and for more information on IEEE-USA involvement, see <http://www.ieeeusa.org/communications/massmedia.asp>.

Fellow applications are due at AAAS on 15 January 2009.

LOCAL TV REPORTS ON ENGINEERING, SCIENCE HIGHLIGHT IEEE TECHNOLOGIES THAT BENEFIT SOCIETY

WASHINGTON (30 September 2008) -- As part of its public-awareness program to promote engineering and technological literacy, IEEE-USA has helped to underwrite almost 600 local television news reports on engineering and science since 2005. The "Discoveries & Breakthroughs Inside Science" TV news reports are distributed to local U.S. television stations in more than 100 cities, transit systems in seven U.S. cities, as well as through the Voice of America and the Roo Online Video Network in more than 60 countries. Stations airing the IEEE-related spots include a mix of ABC, CBS, NBC, Fox, Univision, cable and independent affiliates. IEEE-related technology stories have their own Web site at <http://www.aip.org/dbis/IEEE>.

Recent TV news reports on IEEE technologies that benefit society have included segments on:

--Engineers who have created a model to forecast the progression of a future pandemic allowing researches to design the best way to distribute food and vaccines to those in need --Engineers who have invented a device to bring air samples into contact with genetically engineered biosensors to detect dangerous biological agents -- Environmental scientists and engineers who have developed mathematical models to calculate the impact of pollution from Europe and Asia on areas in the United States --Chemists and engineers who have designed a technology that protects soil and helps promote plant growth to keep topsoil in place over the long term

Additional TV news reports on IEEE technologies include:

--Biomedical and safety engineers who, in order to improve safety for children using seat belts, have added a more lifelike abdomen to models representing youngsters between the ages of 4-8 --Engineers who have developed a computer program to track and schedule immunizations for infants --Psychoacoustics researchers and industrial technologists who use a pen computer to help visually impaired students learn science and math -- Engineers and scientists who have developed a new technology that allows cardiologists to capture detailed pictures of the heart in less than one second, revealing subtle changes in blood flow and blockages in tiny blood vessels --Biomedical engineers who have used advanced cone beam imaging technology to take a series of two-dimensional x-rays, allowing dentists to create a detailed three-dimensional picture of a patient's mouth

The "Discoveries & Breakthroughs" TV news service was developed by the American Institute of Physics (AIP) with a coalition of 23 technical professional organizations including IEEE/IEEE-USA. The service delivers 12 vetted 90 second TV reports monthly -- in English and Spanish -- with a potential reach of up to 75 million TV viewers, and an estimated 41 million online views per month. Academic research has documented that the public obtains most of its information about engineering and science from local TV news and that viewers of the "Discoveries & Breakthroughs" service are more likely to support engineering and science than those who are not viewers.

Former IEEE-USA Mass Media Engineering Fellow Sourish Basu and former IEEE Washington Internships for Students of Engineering Participant Elizabeth Johnston participate with other society representatives in weekly telephone conferences to develop and vet story ideas. "Discoveries & Breakthroughs" is seeking new story ideas to include in its TV reports incorporated in local TV news broadcasts. Pitches should be directed to Emilie Lorditch, the series' manager and senior science editor, at [<elorditc@aip.org>](mailto:elorditc@aip.org).

Nomination Deadline for 2009 "New Faces of Engineering" Recognition Program Fast Approaching
WASHINGTON (3 October 2008) -- The Engineers Week (EWeek) "New Faces of Engineering" program recognizes engineers new to the profession with outstanding educational and career accomplishments. The IEEE and IEEE-USA are seeking nominations for the 2009 "New Faces" campaign.

The program is open to IEEE members worldwide and international nominations are encouraged. Dr. Rajarshi Mukhopadhyay, a mixed-signal design engineer with Texas Instruments in Dallas, was the IEEE/IEEE-USA's 2008 "New Face."

The EWeek "New Faces of Engineering" program is designed to promote the importance of technical education, celebrate engineering careers and recognize significant contributions to the engineering profession and society. Each year, the EWeek Web site (www.eweek.org) features the photos and biographies of five notable young engineers from each EWeek sponsoring society. Each society's top nominee is recognized during EWeek in a full-page ad in USA Today.

EWeek 2009 is 15-21 February.

To be eligible for recognition, engineers must be 30 or younger as of 14 November 2008, have a degree in engineering from a recognized U.S. college or university or equivalent international educational institution. Degrees in engineering technology, science, computer science and similar disciplines do not qualify; a degree in computer engineering is acceptable. Nominees must be a member of a sponsoring EWeek partner.

IEEE nominations can be submitted through IEEE regional directors, section and GOLD chairs, or independently, and should be directed to Helen Hall at h.hall@ieee.org. The nomination form and more information are available at <http://www.eweek.org/site/Engineers/newfaces2009/nomination.shtml>.

The deadline for all IEEE nominations is 17 October 2008. For more on all the 2008 "New Faces" honorees, go to http://www.eweek.org/site/News/Eweek/2008_newfaces.shtml

Sponsored by more than 100 engineering, science and education societies, as well as major corporations dedicated to increasing public awareness and appreciation of engineering, EWeek is celebrated annually by thousands of engineers, engineering students, teachers and leaders in government and business. The IEEE served as lead society during EWeek 1993 and 2004.

The National Society of Professional Engineers and the Intel Corporation are serving as EWeek 2009 co-chairs.

The "New Faces of Engineering" program was the American Society of Heating, Refrigerating and Air Conditioning Engineers' legacy project for EWeek 2003. The program is now in its seventh year. The IEEE/IEEE-USA's "New Faces" each year were:

2003 -- Deborah Zwitter, IBM Corporation, Essex Junction, Vt.

2004 -- Dominique Green, Accenture, Reston, Va.

2005 -- Dr. Mark Hersam, Northwestern University, Evanston, Ill.

2006 -- Vanessa Koutroupas, General Dynamics Advance Information Systems, Bloomington, Minn.

2007 -- Dr. Carlos Cordeiro, Philips Research North America, Briarcliff Manor, N.Y.

2008 -- Dr. Rajarshi Mukhopadhyay, Texas Instruments, Dallas, Texas

The IEEE Cincinnati Section Executive Committee **Member Names and Phone Numbers**

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